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Atrium Houses in Poland – Expectations and Reality

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Abstract

The article discusses the issue connected with the formation and functioning of the atrium housing in the modern urban tissue. Spatial and functional analyses of atrium housing lead to conclusions of the simplicity and diversity of these fascinating solutions. Residential atrium estates were once the embodiment of the modern city in social terms and the guarantor of the quality of life of residents. But now this type of construction is unpopular and is very rarely found in developing Polish cities. Although this type of housing could fill the gap between the numerous multi-family buildings of major cities and single-family housing, presently, it is treated only as an experiment in shaping the residential environment. The original buildings undergo expansions and visual changes, while new projects are not created. What are the reasons for such a situation? Are they social, historical, economic or perhaps others? Is the demand for flexible and diverse architecture subjected to constant changes resulting from the times it concerns?

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1. Introduction

The phenomena occurring in contemporary housing are connected with the changing standards of living and social needs. That is why, the issue of creation of living conditions and housing space in urban environment requires further analysis. The development of built-up areas in cities has a two-track approach and it is observed in certain socio-legal and cultural realities. In recent years the peripheral districts have been expanded, which is connected with greater availability of residential areas for investments. Numerous single-family housing, mainly row and detached ones, are

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built there. The effect of a ‘spill-over’ of the cities is noticed. On the other hand, urban structure densification and expansion are carried out by acquiring plots inside the built-up structures. A key role is played here by real estate developers whose activities are subordinated to the realities of the market. In Warsaw and many other Polish cities new multi-family housing estates are erected. Undoubtedly, they create a comfortable lifestyle. But because they are inaccessible from the outside, they also make their residents’ living environment closed off by fencing the buildings and whole estate areas. Many of these housing estates misunderstand the concept of an ideal housing environment and create the basis for social segregation. As a result, negative effects are visible. One of them is fragmentation of the city landscape [1]. While aiming towards higher standards of living and building social relationships and a sense of identity, it is worth turning the attention to other attractive spatial solutions and ways of housing development, which are highly popular and recognized in the world, and which in Poland were once called ‘a building experiment’. Despite the fact that the atrium houses have many advantages, for example, they shape urban space, have structured aesthetics and improve the quality of the housing environment, they did not gain popularity in the past. Presently, they are also very rarely built. What are the reasons for such a situation?

2. Facts

Around the world, residential development is often associated with the concepts of multi-storey or single-family housing. However, there are many forms in between. Some of such forms are more interesting combinations, which gravitate towards single or multi-family buildings [2] and are based on various ways of creating apartments, as well as private and semi-private space in the direct surroundings of residential development. They are known as ‘collective houses’ (houses of dense and low structure). In Poland we deal most often with the types of single and multi-family housing. A row house is quite popular form as it allows various indirect solutions. Atrium complexes or other carpet housing are built very rarely and the existing examples only fill the gaps in urban development and are considered as urban infill.

The survey of TNS Poland from 4-8th October 2013, published in *Newsweek Poland*, examined changes in socio-economic situation of Poles and, among other things, took into account their way of living. According to it, 57% of Poles live in blocks of flats, tenement and multi-family houses. Others declare to live in single-family, semi-detached and row houses [3]. Another report by Home Broker presented at the portal *egospodarka.pl* reveals that 52% of Poles live in single-family houses, while in Poland there is four times less row and semi-detached houses compared to other European countries. There is no information about other forms of single-family housing.

While analysing the latest investments in housing development, the activities of individual investors are lower in relation to the real estate developers. Taking into account the number of building permits issued, an upward trend in constructing multi-family housing, so called blocks of flats, is observed. The number of such houses is continually increasing as it is the most popular form of housing among Poles [4].

The above information about existing and newly emerging housing does not include buildings such as atrium houses. It is due to the fact that the number of opinions is regarded as insufficient to conduct a credible survey. What is more, the concept of an ‘atrium house’ is not well established as a standard type of housing. This concept does not exist in Polish nomenclature. Construction Law says that a single-family house ‘(...) should be understood as a detached or semi-detached house, a row or group house, serving to satisfy the accommodation needs of residents and which is a structurally independent entity (...)’. Some sorting out of the naming was done by Hanna Adamczewska-Wejchert in her research paper on atrium houses. She clarified the meanings of ‘carpet’, ‘chain’ and ‘group’ housing while the latter describes a repetitive urban element, which is isolated from the rest, implicitly specifying what type of building it refers to [5].

3. Types of houses and layouts of atriums

Original atrium houses can be found in the era of flourishing Greek and Roman cultures. The spatial concept of the Roman house was based on an atrium. The central space was lit from the top and had a centripetal character. Today, the continuation of such thinking is visible in the contemporary variants of shaping atriums. They are often created as spaces combined into groups or shared even within a single segment. Despite the development of modern technologies and changing approaches in the design of a single-family house, still the element of solar exposure and the access of light to the interior form the basis of thinking about the space. The shape and size of an atrium is determined not only by the proper exposure to the daylight but also by the functional layout of the house and the varieties of arrangement.

When considering the shape of the atrium houses, they can be divided into at least five types: garden courtyard house, shared courtyard house, L-shaped house, patio house and atrium-type house. Then there are other possibilities of building extensions and making a variety of combinations between different parts of the building, for example, by connecting the buildings with the inner courtyards [6].

When it comes to the analyses of the shape of the building and the amount of the wings the division may differ. Atrium houses may be in the shapes of 'I', 'L', 'Z', 'T', 'U', 'C', 'O', and 'H' letters [5]. There are also many possibilities of combining houses into compact groups and creating some common space. The most popular is an L-shaped house, which enables group combinations with an atrium. This gives the greatest potential for solar exposure of the inner patio together with different possibilities of constructing the interior and preserving its autonomy and privacy at the same time.

Examples of European housing construction, especially Scandinavian, present atrium houses of different kinds. Space is treated with flexibility and the adjustments to meet the individual needs are also possible. However, such modern trends in treating the living space and building the residential environment are not observed in Poland.

4. Possibilities of creating spatial solutions

The characteristic feature of atrium houses is that the apartments are located next to each other and might have even three adjacent walls. The buildings form together a residential quarter while maintaining the standards of a single-family house with its own private garden and a piece of sky. An atrium may be surrounded by the walls on all sides or connected with adjacent ones. It also might belong to the common space. However, it is always a central part of the house. Most of the rooms face the inner courtyard and are isolated from the street zone. Blind walls are directed at neighbour's atrium so as not to interfere with his private space. Atrium houses consider greenery as the most important element of spatial composition, but a key role is played by the sun. Orientation towards the sun, the compactness of the building and the small size of individual segments are beneficial in terms of energy. An atrium when replaced by an 'energy garden', gives the possibility of obtaining energy for home and creates some additional space for living [6]. It might be said that this reasonable solution combines many positive attributes of an individual house and the block of flats. At the same time the density of housing is achieved. Additionally, in terms of urban planning, atrium complexes organize the space and make it more homogeneous by using repetitive segments. However, this type of housing should be a common or collective investment due to the need of providing a fully-serviced plot of land and further completion of the whole project at one time. It is a more organized form of investment and construction, which makes building atrium houses similar to bigger investments, e.g. multi-family housing. What is more, the free choices and changes in architectural projects are not possible, as it often happens in case of individual houses. The unity of the whole building and its characteristic homogeneous appearance must be ensured [5]. Atrium houses are separated from the visual and noise penetration, therefore they might seem to be very intimate and inaccessible. The view from the street is limited as well as the access to the adjacent buildings. This considerably narrows neighbourly and community relations.

5. Examples in Poland

Few houses built in Poland include the objects from the 70s, which now are almost historical buildings and are valuable examples of decaying post-war modernism.

Architects' experimental atrium housing complex in Warsaw

One example is the complex of houses situated at Okrezna and Jedlinska Street in the Warsaw district of Sadyba. The residential estate was completed thanks to the initiative of employees of Warsaw University of Technology. The whole construction lasted a very long time, from 1968 to 1972. The main designer was an architect Donat Putkowski. At first the half-acre parcel of land was supposed to include 8-10 detached houses, however, a Scandinavian model of building atrium houses won. Although in those times getting building materials was very difficult and investment funding together with legal regulations did not encourage such undertakings, the completion of the project was successful mainly due to its name. The complex was called 'experimental houses'. Only thanks to the involvement in the design and investment process, it was possible to complete the construction. 12 one-storey buildings of slab-on-

grade type were constructed. The size of plots ranged from 158 to 380 m² including the atrium's floor, which depending on the location had 48 to 138 m². The usable floor area of the buildings was from 80 to 126 m². Five pairs had one common atrium and two were semi-open because of the triangular shape of the corner plot. Private involvement played a huge role. Each investor built it for himself and every interior was designed by a different architect. Despite the individualization of the size of the window openings and different atriums' arrangements, this group of houses forms a coherent entity [7].



Fig..1 (left), (right) Architects' experimental atrium housing complex.

'Patronat' - the atrium building complex in Warsaw

19 houses were erected on Ziolkowskiego Street among the standard single-family housing. An architect Andrzej Haintze together with his team designed it. The construction lasted three years. The size of plots ranged from 220 to 270 m². The buildings were cellared and some of them had garages. Flexible and functional layout was offered. Three types of houses were distinguished- three and five-room apartments of 100 or 115 m² and open space apartments of 100 m². The apartments were well-lit and all were connected with the isolated space of an atrium. Also in this case, the complex was built thanks to the efforts of its future residents. Everyone worked together on the construction site and the allotment of the apartments took place after its completion depending on the input of labour and involvement in the investment process. Organizational limitations and lack of building materials required seeking unconventional solutions and applying creative thinking in order to acquire a new house [7]. This complex of houses has not survived in its original form until now as superstructures and transformations of the facade have been made.

'Widok-Zarzecz' - the atrium housing estate in Cracow

The estate was built between Machaya and Wiedenska Street between 1973-75 and is one of the largest in Poland, including 140 residential buildings. The authors of the project are Małgorzata Buratyńska-Seruga and Barbara Bielec. This project includes two atrium houses designed on half floors, creating a common space of an inner atrium. They are turned back towards internal communication streets. The whole layout is very regular, ordered and thanks to its size it gives the impression of a private, peaceful and attractive area of the city [8].

6. Summary

The solutions of atrium buildings presented above have flexible and functional layout to satisfy the users' individual needs. The combination of particular units allowed the minimization of the construction and cost savings on building materials. Thanks to introducing greenery in front gardens and the interiors, natural and quiet areas with the possibility of sun penetration were created. Applying the gradation of openings between the inside and outside areas contributed

to the unique and friendly atmosphere of the urban development.

The above examples showed a great commitment of residents. They took part in the construction process, organizational and social work. Without it, the completion of the projects, the process of construction and the whole investment as well as the arrangement of the space would not have been possible. It had a huge impact on building social relations between the inhabitants and a strong sense of belonging to the place of living. Despite the different planning solutions and changes which occurred in housing development a coherent idea of harmonious and intimate housing estate is visible.

7. Reasoning

Why have not atrium houses gained any popularity in Poland and are not interesting for the audience of modern architecture? The answers to these questions seem to be more complex but have historical, sociological and psychological basis. The statement saying that an ideal house for Poles is a detached two-storey house surrounded by a small patch of land and a high fence still seems to be true and is deeply rooted in Poles' minds [5]. A single family house is seen as a symbol of safety, tradition and identity. It also might represent longing and desire to return to old customs of the functioning of extended families. This type of house is deeply rooted in the culture and traditions of the Polish construction industry and will always be associated with the ideal contemporary life.

After World War II single-family housing was developing in specific economic and social conditions. It was very difficult to have this kind of house and it had to be built according to just few fixed projects. Since then a division in multi-storey housing investments has been observed. Some projects were completed by the state while others by private investors [2].

Another reason is the economic factor. After 1989, the so-called transition period, the largest share of building residential objects has been gained by property developers. Still, for these companies, the economic factor influences their building activities and is connected with the price of the plots in the cities. The desire to build the greatest number of flats to sell determines the architectural creations of residential areas. Usually it is a multi-family housing, for example, large gated complexes, quarter housing, and single gated community estates [9]. Even though the intensity of the atrium housing is high, the efficiency in the number of such houses cannot be reached. The interpretation of the construction law by officials in the process of obtaining a building permit might be a serious impediment. Atrium houses are treated as multi-family housing but actually they are not the one. What is more, their structure corresponds to more organized forms of investments.

Another factor may be the wrong understanding of intimacy in the way of living and having a neighbour right behind the doors, not the fence. An atrium house does not seem to fulfil a strong desire for privacy or separation from communities, which may be sought by city dwellers. One of the reasons for that is stress caused by living in the city. However, the character of an atrium house gives the possibility of withdrawal and isolation from neighbours, but it also enables to personalize the space, treat it individually, and modify it into the open or closed one when it is needed. This variable can also be considered as the opportunity to communicate with the surrounding area and the physical environment, if necessary. Carpet housing with its centripetal character and arrangement of space allows to avoid neighbourly relations, ensures bigger control of them, and provides the privacy for the families [10].

In view of the obvious advantages of atrium housing it is difficult to notice other reasons for an extremely rare development of such building projects in Poland. A rapidly growing residential architecture gives hopes for some changes, especially in formal and design regulations related to atrium housing.

8. Conclusions

Residential housing of low type has a rich tradition in Poland. However, it is slowly disappearing from the urban landscape. It is worth continuing the good architectural solutions of low and dense housing, which are practiced and recognized both in the country and around the world. It is also important to protect its values, explore the potential and patterns of such an architecture. An atrium house is open, flexible, easy to create and adapt to new architectural and spatial variants. It is also economical. At the same time, it creates one of the most original and intimate spaces among all types of single-family houses. Finally, it meets most requirements of the attractive and friendly housing architecture.

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